

19

کون جیسی رازم
بسم

$$f\left(\underbrace{f\left(\frac{1}{2}\right)}_{\sqrt{2}}\right) \rightarrow f\left(\frac{1}{2}\right) = \cos \frac{1}{2} \rightarrow \cos \frac{\pi}{4} \rightarrow \cos \frac{\pi}{4} \rightarrow \frac{1}{2}$$

$$f(\sqrt{2}) = \sqrt{2} = \frac{1}{2} \checkmark$$

(1)
(2)

$$f(g(\frac{\pi}{2})) \quad g(\frac{\pi}{2}) = 2 \cos \frac{\pi}{2} \rightarrow \left[\frac{1}{2}\right] \quad f\left(\frac{1}{2}\right) \rightarrow f(2) = \sqrt{\frac{2}{2}} \checkmark$$

(ف) (2)
(2)

$$f(g(\sqrt{2})) \quad g(\sqrt{2}) = \frac{\sqrt{2}}{1-\sqrt{2}} \rightarrow \frac{\sqrt{2}}{1-\sqrt{2}} \times \frac{1+\sqrt{2}}{1+\sqrt{2}} = \frac{\sqrt{2}+\sqrt{2}}{1-2} = \frac{2\sqrt{2}}{-1} \rightarrow \frac{-2\sqrt{2}}{-1}$$

$$f(-2\sqrt{2}) = [-2\sqrt{2}] \rightarrow [-2] \checkmark$$

(3)

(2) (3)

$$f(g(f(\frac{\pi}{2}))) \quad f(\frac{\pi}{2}) = \sin \frac{\pi}{2} \rightarrow \frac{\sqrt{2}}{2}$$

$$g(\frac{\sqrt{2}}{2}) = \frac{\sqrt{2}}{2} \sqrt{1-\frac{1}{2}} \rightarrow \frac{\sqrt{2}}{2} \sqrt{\frac{1}{2}} = \left[\frac{1}{2}\right] \checkmark$$

(2) (4)

$$\checkmark (1, 1), (2, 1), (2, 2), (2, 3) \text{ (ف)}$$

$$\checkmark \emptyset \text{ (2)}$$

$$\checkmark \emptyset \text{ (2)}$$

$$\checkmark (2, 1), (2, 2), (2, 3) \text{ (1)}$$

~~$(f, g) \in \mathcal{G}$~~ $(f, r) \in \mathcal{G} \rightarrow (a, r) \rightarrow (r, r)$ (2) (3)
 $(f, 1) \in \mathcal{G}$
 $\downarrow$
 $\boxed{a=r}$ ✓ $(a, b) \rightarrow (r, b)$
 $\downarrow$
 $(f, b) \rightarrow (b, r)$
 $\downarrow$
 $\boxed{b=r}$ ✓

~~$f(f(x)) = f(ax+b) = f(ax+r) + r = f(ax) + r$~~

$f(x) = ax + b$

$f(f(x)) = a^2x + ab + b$ $\begin{matrix} a=r \\ b=1 \end{matrix}$

$\xrightarrow{ab=1} g(-1)$

$2a + r = -1 \rightarrow a = -r$

$g(-1) = \boxed{-1}$

$f(x) = rx + 1$ ✓

$f(-1) = (-1)$ ✓

$g(x) = ax + b$

$g \circ f = (a'x + b') \rightarrow rx - r$

$a' = \frac{5}{7}$ $b' = -\frac{18}{7} \rightarrow g = \frac{5}{7}x - \frac{18}{7}$
 این جواب است
 مسئله 9-1

(4)
 (1)
 $g(-1) = -\frac{5}{7} - \frac{18}{7}$
 $g(-1) = -\frac{23}{7}$
 $\boxed{-\frac{23}{7}}$
 این جواب است

$g \circ f = \frac{1}{n+|n| - \sqrt{n+|n|}}$

- ⊖ → منفی کنه
- ⊙ → خروج با منفی کنه
- ⋀ → خروج با
- " "

$D_f = R^+ - \{1\}$ ✓

$(f+g) \circ f \rightarrow f \circ f + g \circ f$

$\sqrt{1-u^2} + \sqrt{1-u^2}$

$1-u^2 > 0 \rightarrow -1 < u < 1$

$1-|1-u^2| > 0 \rightarrow u^2 > 0$

$\rightarrow D = [-1, 1]$ ✓

~~$D_f = [1, 3] \rightarrow R_f = [2, 4]$~~
 ~~$R_g = [2, 4]$~~

~~$(f+g) \circ f$~~
 ~~$D = [1, 3]$~~

$$\frac{r_{n+1}}{n-r} = t$$

↓

$$n = \frac{rt+1}{t-r}$$

$$f(x) = \frac{r+19x}{x-r} + \omega \rightarrow \boxed{f(x) = \frac{19x-11}{n-r}} \checkmark$$

(31) (9)

(1)

$$n + \frac{1}{n} = t$$

$$t - r = \alpha = n + \frac{1}{n}$$

$$f(n) = n - rn \checkmark$$

~~$f(x) = \frac{r+19x}{x-r} + \omega$~~
 ~~$f(x) = \frac{19x-11}{n-r}$~~
 ~~$f(x) = \frac{r+19x}{x-r} + \omega$~~
 ~~$f(x) = \frac{19x-11}{n-r}$~~

$$g \xrightarrow{\omega} L_{\sqrt{r}} \rightarrow (n-1)(n-r)$$

$$f: \mathbb{Z} \rightarrow (n\sqrt{n}-1) (\cancel{n\sqrt{n}}\sqrt{r})$$

$$\downarrow \quad \downarrow$$

$$1 \quad r$$

$$\checkmark K1 = \boxed{1} (10)$$

19r ↗

(1)